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09/690,566	10/17/2000	Michael P. Lilly	LLY-004	1577

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EXAMINER

VAN DOREN, BETH

ART UNIT PAPER NUMBER

3623

DATE MAILED: 08/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/690,566

Applicant(s)

LILLY ET AL.

Examiner

Beth Van Doren

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13, 15-30, 32 and 33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-13, 15, 16, 18, 25-30, 32 and 33 is/are rejected.
- 7) ☒ Claim(s) 6, 17 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. The following is a Final office action in response to communications received 07/27/06.

Claims 1-13, 15-30, and 32-33 are pending in this application.

#### ***Response to Arguments***

2. Applicant's arguments with regards to Powell (U.S. 6,195,590) in view of Chapman (U.S. 5,128,860) have been fully considered, but they are not persuasive. In the remarks, Applicant argues that (1) Chapman does not teach or suggest that schedules are compared because Chapman does not compare arrays but rather arrays are combined and decremented, (2) that the intended purpose of the claimed invention differs from the intended purpose of Chapman and thus one of ordinary skill in the art would not make comparisons between Chapman and the claimed invention, (3) there is no suggestion in the references or prior art to combine Chapman and Powell.

In response to argument (1), Examiner respectfully disagrees. Examiner first points out that she relied on Powell to disclose comparing the scheduled completion date with the requested completion date for each selected item orders, as set forth below. Powell was further relied on to teach deriving a customer service measurement for each selected item order based on said comparing, the customer service measurement comprising a measurement of at least one of time and money. Chapman was specifically relied upon to teach different aspects and information that would be included in a comparison, these aspects and information arranged in arrays, as asserted below. Further, Examiner asserted that Chapman taught comparing the scheduled completion date of an item in the supply array with the requested completion date for the matched item in the demand array in column 4, lines 60-67, column 8, lines 45-61, column 9,

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lines 19-32 and 45-50, and column 10, line 5-25. Examiner maintains this assertion. Looking specifically at column 9, lines 19-32 and 45-50, and column 10, lines 5-25, Chapman discloses that the desired schedule (i.e. the desired demand quantity and completion date (and/or starting date)) and the resource schedule (i.e. the availability to supply the demand based on capacity and resources) are compared to see if resources can accommodate demand. New schedules are proposed based on the demand and supply, and when no complete solution can be found (ie some or all of the demand cannot be met by the current supply), an error or alternative suggestion is generated. Examiner is unclear how this discussion by Chapman does not clearly establish the comparing of schedules.

In response to applicant's argument (2) that Chapman is nonanalogous art and does not serve the same intended purpose as Powell, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Examiner first points out that she relied on Powell to disclose the limitation of deriving a customer service measurement. Therefore, it is unclear why the applicant's discussion of differences in intended purpose between the prior art and the claimed invention is void of any discussion of Powell. Furthermore, Chapman is concerned with trying to fulfill demand requirements, including a desired demand quantity and a desired completion date (and/or starting date). Therefore, it is unclear as to how a reference concerned with satisfying time varying demand for resources is not in the same field of endeavor as claims concerned with customer service impact.

In response to argument (3), In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both Chapman and Powell disclose systems for improving scheduling in manufacturing systems where demands have time varying elements. Powell discloses scheduling an order and, using data stored in the system, comparing a completion and a requested completion date. Chapman discloses arranging the data of the system into arrays and then manipulating this data to schedule demand fulfillment in a manufacturing process. Chapman specifically discloses the more efficient and timely evaluation of data through the use of the stored data structures of matrices and arrays in at least column 2, lines 45-65 and column 5, lines 29-40. Therefore, since both systems are concerned with improving scheduling, one of ordinary skill in the art at the time of the invention would have been motivated to use the arrays of Chapman to store and manipulate the data of Powell based on the specific disclosure of Chapman discussing operating effectiveness.

***Allowable Subject Matter***

3. Claim 6, 17, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Further, if the elements of claim 17 were added to claim 19, claim 19 would be considered allowable. Examiner reserves the right to update her search.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-5, 7-13, 15-16, 18-23, 25-30, and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Powell (U.S. 6,195,590) in view of Chapman (U.S. 5,128,860).

As per claim 1, Powell teaches a computer-implemented method for determining customer service impact, comprising:

receiving item orders having a requested completion date (See column 1, lines 62-67, column 2, lines 17-30, column 3, lines 1-3 and 60-67, wherein items ordered have dates established as required completion dates);

scheduling a scheduled completion date for each item order (See column 1, lines 62-67, column 2, lines 17-30, column 3, lines 1-3 and 60-67, wherein a completion date is scheduled for each order/event);

selecting at least one item order, each item order having a scheduled completion date (See column 1, lines 62-67, column 2, lines 17-35 and line 65-column 3, line 20 and lines 60-67, wherein each order has a scheduled completion date and wherein the order is selected to determine the delta value, or the value representing whether the order is early or late with regards to the schedule);

comparing the scheduled completion date with the requested completion date for each selected item orders (See column 1, lines 62-67, column 2, lines 17-35 and line 65-column 3, line

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20 and lines 60-67, wherein each order has a scheduled completion date and wherein the order is selected to determine the delta value, or the value representing whether the order is early or late with regards to the schedule);

deriving a customer service measurement for each selected item order based on said comparing, the customer service measurement comprising a measurement of at least one of time and money (See column 2, lines 17-35 and line 65-column 3, line 20 and lines 60-67, and column 6, lines 29-31, wherein a measurement of earliness or lateness is derived based on time).

However, Powell does not expressly disclose and Chapman discloses wherein said comparing comprises:

generating a demand array of item orders (See column 3, lines 50-65, column 4, lines 35-60, and column 9, lines 45-50, wherein a demand array is created that conveys demanded items);

generating a supply array of manufacturing inventory (See column 3, lines 59-67, column 8, line 60-column 9, line 30, which discloses an array of the supply/resources available);

selecting an item order in the demand array (See column 4, lines 1-13 and 60-65, column 9, lines 45-55, column 10, lines 5-22, wherein an item is selected to which resources are assigned);

matching manufacturing inventory in the supply array with the selected item order (See column 4, lines 1-13 and 60-65, column 9, lines 45-55, column 10, lines 5-22, wherein an item is selected to which resources are assigned); and

comparing the scheduled completion date of an item in the supply array with the requested completion date for the matched item in the demand array (See column 4, lines 60-67,

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column 8, lines 45-61, column 9, lines 19-32 and 45-50, and column 10, line 5-25, wherein the schedules are compared).

Both Chapman and Powell disclose systems for improving scheduling in manufacturing systems where demands have time varying elements. Powell discloses scheduling an order and, using data stored in the system, comparing a completion and a requested completion date.

Chapman discloses arranging the data of the system into arrays and then manipulating this data to schedule demand fulfillment in a manufacturing process. It would have been obvious to one of ordinary skill in the art at the time of the invention to use arrays to store and manipulate the data of Powell in order to more efficiently allocate and schedule resources by arranging the data using means that allow quicker evaluation of the data. See Chapman, column 2, lines 45-65 and column 5, lines 29-40.

As per claim 2, Powell discloses wherein said deriving comprises:

deriving a customer service measurement for each item order based on said comparing, the customer service measurement comprising the time difference between the requested completion date and a scheduled completion date (See column 2, lines 17-35 and line 65-column 3, line 20 and lines 60-67, wherein the delta value is the actual date minus the required or requested date (i.e. the difference of the dates)).

As per claim 3, Powell wherein the time difference is measured in one or more of years, weeks, days, hours, minutes, and seconds (See column 2, lines 17-35 and line 65-column 3, line 20 and lines 60-67, wherein the difference is measured in days).

As per claim 4, Powell discloses wherein said deriving comprises:



deriving a customer service measurement for each item order based on said comparing, the customer service measurement comprising the value of the item order (See column 2, lines 17-35 and line 65-column 3, line 20 and lines 60-67, and column 6, lines 29-31, wherein a measurement of earliness or lateness is derived based on time. See column 6, lines 30-40 and line 55-column 7, line 15 and 25-45, wherein the value (or cost) is also considered with respect to the measurement).

As per claim 5, Powell discloses wherein said deriving comprises:

deriving a customer service measurement for each item order based on said comparing, the customer service measurement comprising the amount of time difference between the requested completion date and a scheduled completion date multiplied by the value of the item order (See column 2, lines 17-35 and line 65-column 3, line 20 and lines 60-67, and column 6, lines 29-31, wherein a measurement of earliness or lateness is derived based on time. See column 6, lines 30-40 and line 55-column 7, line 15 and 25-45, wherein the value (or cost) is amplified with respect to the measurement).

As per claim 7, Powell teaches determining an overall customer service measurement based on the customer service measurement for each item order (See column 2, lines 17-35 and line 65-column 3, line 20 and lines 60-67, and column 6, lines 29-31).

As per claim 8, Powell teaches reporting the overall customer service measurement as the overall customer service measurement for that scheduling operation (See column 5, lines 45-67, column 6, lines 40-55, column 7, lines 15-30, wherein reports are generated).

As per claim 9, Powell discloses displaying the customer service measurement on a calendar showing the total customer service measurement for a predetermined time period (See

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column 2, lines 55-column 3, line 10 and lines 60-67, and column 4, lines 1-15, wherein the customer service measurement is shown and considered when scheduling other orders and activities. See also tables 1-2).

As per claim 10, Powell discloses repeating said receiving, scheduling, selecting, comparing, deriving, and determining for different schedules to determine the customer service impact of schedule changes (See column 2, lines 1-6, column 4, lines 20-32, column 5, lines 30-42, wherein changes to the schedule are evaluated).

As per claim 11, Powell discloses determining a customer service measurement for a first customer based on the customer service measurement for each item order from the first customer (See column 2, lines 17-35 and line 65-column 3, line 20 and lines 60-67, and column 6, lines 29-31, wherein a measurement of earliness or lateness of a product is derived based on time).

As per claim 12, Powell teaches displaying the customer service measurement on a calendar showing the total customer service measurement for a predetermined time period (See column 2, lines 55-column 3, line 10 and lines 60-67, and column 4, lines 1-15, wherein the customer service measurement is shown and considered when scheduling other orders and activities. See also tables 1-2).

As per claim 13, Powell further comprising repeating said receiving, scheduling, selecting, comparing and determining for different schedules to determine the customer service impact of schedule changes (See column 2, lines 1-6, column 4, lines 20-32, column 5, lines 30-42, wherein changes to the schedule are evaluated).

As per claim 15, Powell discloses line items, wherein data concerning the line item is controlled by the system (See column 4, line 62-column 5, line 12, and table 1). Powell further

discloses all the activities for all the components needed to complete the product (i.e. engineering, purchasing, fabrication, assembly) (See column 3, lines 54-57). However, Powell does not expressly disclose generating a demand array or that the line items are unshipped.

Chapman discloses generating a demand array of item orders (See column 3, lines 50-65, column 4, lines 35-60, and column 9, lines 45-50, wherein a demand array is created that conveys demanded items).

Both Chapman and Powell disclose systems for improving scheduling in manufacturing systems where demands have time varying elements. Powell discloses scheduling an order and, using data stored in the system, comparing a completion and a requested completion date. Chapman discloses arranging the data of the system into arrays and then manipulating this data to schedule demand fulfillment in a manufacturing process. It would have been obvious to one of ordinary skill in the art at the time of the invention to use arrays to store and manipulate the data of Powell, such as demand data, in order to more efficiently allocate and schedule resources by arranging the data using means that allow quicker evaluation of the data. See Chapman, column 2, lines 45-65 and column 5, lines 29-40.

Further, Powell discloses all the activities needed to complete the product, such as engineering, purchasing, fabrication, assembly. It is well known in the art that completing a product for a customer includes delivery of said product. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include shipping in the activities needed to complete the product in order to increase customer service by including all the activities required to complete the order of the customer.

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As per claim 16, Powell does not expressly disclose and Chapman discloses wherein said generating a supply array comprises generating a supply array of at least one of inventory work orders and manufactured inventory (See column 3, lines 59-67, column 8, line 60-column 9, line 30, which discloses an array of the supply/resources available and assignable to work).

As per claim 18, Powell teaches identifying as a potential bottleneck a material or resource having the greatest result in the at least one of a utilization, contention, and material constraint inquiry (See column 5, lines 10-26, wherein an activity constrained is identified as a potential bottleneck in the system).

Both Chapman and Powell disclose systems for improving scheduling in manufacturing systems where demands have time varying elements. Powell discloses scheduling an order and, using data stored in the system, comparing a completion and a requested completion date. Chapman discloses arranging the data of the system into arrays and then manipulating this data to schedule demand fulfillment in a manufacturing process. It would have been obvious to one of ordinary skill in the art at the time of the invention to use arrays to store and manipulate the data of Powell, such as supply data, in order to more efficiently allocate and schedule resources by arranging the data using means that allow quicker evaluation of the data. See Chapman, column 2, lines 45-65 and column 5, lines 29-40.

As per claim 19, Powell teaches a system for determining customer service impact, comprising:

a receiver for receiving item orders having a requested completion date (See column 1, lines 62-67, column 2, lines 17-30, column 3, lines 1-3 and 60-67, wherein items ordered have dates established as required completion dates);

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a scheduler for scheduling a scheduled completion date for each item order (See column 1, lines 62-67, column 2, lines 17-30, column 3, lines 1-3 and 60-67, wherein a completion date is scheduled for each order/event);

a selector for selecting at least one item order, each item order having a scheduled completion date (See column 1, lines 62-67, column 2, lines 17-35 and line 65-column 3, line 20 and lines 60-67, wherein each order has a scheduled completion date and wherein the order is selected to determine the delta value, or the value representing whether the order is early or late with regards to the schedule);

a comparator for comparing the scheduled completion date with the requested completion date for the selected item orders (See column 1, lines 62-67, column 2, lines 17-35 and line 65-column 3, line 20 and lines 60-67, wherein each order has a scheduled completion date and wherein the order is selected to determine the delta value, or the value representing whether the order is early or late with regards to the schedule);

a measurement subsystem for deriving a customer service measurement, the customer service measurement comprising at least one of time and money, for each selected item order based on the comparison (See column 2, lines 17-35 and line 65-column 3, line 20 and lines 60-67, and column 6, lines 29-31, wherein a measurement of earliness or lateness is derived based on time).

However, Powell does not expressly disclose and Chapman discloses wherein said comparing comprises:

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a first generator for generating a demand array of item orders (See column 3, lines 50-65, column 4, lines 35-60, and column 9, lines 45-50, wherein a demand array is created that conveys demanded items);

a second generator generating a supply array of manufacturing inventory (See column 3, lines 59-67, column 8, line 60-column 9, line 30, which discloses an array of the supply/resources available);

a selector for selecting an item order in the demand array (See column 4, lines 1-13 and 60-65, column 9, lines 45-55, column 10, lines 5-22, wherein an item is selected to which resources are assigned);

a matching subsystem for matching manufacturing inventory in the supply array with the selected item order (See column 4, lines 1-13 and 60-65, column 9, lines 45-55, column 10, lines 5-22, wherein an item is selected to which resources are assigned); and

a comparator for comparing the scheduled completion date of an item in the supply array with the requested completion date for the matched item in the demand array (See column 4, lines 60-67, column 8, lines 45-61, column 9, lines 19-32 and 45-50, and column 10, line 5-25, wherein the schedules are compared).

Both Chapman and Powell disclose systems for improving scheduling in manufacturing systems where demands have time varying elements. Powell discloses scheduling an order and, using data stored in the system, comparing a completion and a requested completion date. Chapman discloses arranging the data of the system into arrays and then manipulating this data to schedule demand fulfillment in a manufacturing process. It would have been obvious to one of ordinary skill in the art at the time of the invention to use arrays to store and manipulate the

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data of Powell in order to more efficiently allocate and schedule resources by arranging the data using means that allow quicker evaluation of the data. See Chapman, column 2, lines 45-65 and column 5, lines 29-40.

Claims 20-23, 25-27, and 32-33 recite equivalent limitations to claims 2-5, 7-9, and 15-16, respectively, and are therefore rejected using the same are and rationale as set forth above.

As per claim 28, Powell discloses a display for displaying the customer service measurement of different schedules to determine the customer service impact of schedule changes (See column 2, lines 1-6, column 4, lines 20-32, column 5, lines 30-42, column 8, lines 15-25, wherein changes to the schedule are evaluated and displayed).

As per claim 29, Powell teaches a display for displaying a customer service measurement for a first customer based on the customer service measurement for each item order from the first customer (See column 2, lines 55-column 3, line 10 and lines 60-67, and column 4, lines 1-15, wherein the customer service measurement is displayed. See also tables 1-2).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lilly et al. (U.S. 7,039,595) discloses a system that considers supply and demand arrays and determines impact on customer service.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Beth Van Doren whose telephone number is (571) 272-6737. The examiner can normally be reached on M-F, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*bvd*  
bvd

August 11, 2006

*Romain Jeanty*  
Primary Examiner  
Art Unit 3623